

Amendments to the Claims

1. (currently amended) A radiation flux imaging system comprising:
a non-imaging radiation detection ~~means~~ device;
a position ~~sensing means~~ sensor, to detect the position and orientation of said radiation detection means;
a contact sensor to detect contact of said radiation detection means with a surface to be imaged;
a processor ~~processing means~~ to process position and orientation data from said position ~~sensing means~~ sensor, the presence or absence of contact from said contact ~~sensing means~~ sensor and local radiation flux from said radiation detection means to determine the surface geometry of a surface to be imaged and the corresponding field of radiation flux; and
a display ~~means~~, to display said geometry and radiation flux field to a user.
2. (cancelled)
3. (currently amended) A system according to claim 1, wherein said processor is configured ~~processing means further includes means~~ to identify positions corresponding to inadequate data collection, and ~~means~~ to communicate those positions to a user, in use.
4. (currently amended) A system according to claim 1, further comprising ~~means~~ a biasing device to bias said radiation detection means away from a surface to be imaged, and a processor ~~processing means~~ to calculate the depth of a radiation source below said surface to be imaged by comparison of the local radiation flux in the biased and unbiased positions.
5. (currently amended) A system according to claim 1, further comprising ~~means~~ a marking device to mark the surface to be imaged.
6. (cancelled)

7. (currently amended) A system according to claim 1, wherein the position ~~sensing means~~ sensor comprises a plurality of position ~~sensing means~~ sensors, fixed relative to each other, and the processor is configured ~~processing means further comprises means~~ to compare the measured relative positions of the said plurality of position ~~sensing means~~ sensors, thereby providing an identification of position measurement errors.

8. (currently amended) A system according to claim 1, wherein the processor ~~processing means~~ identifies any radioactive source with an activity above a pre-set level and displays the position (s) of those/or that radioactive source (s) on the display ~~means~~.

9. (currently amended) A system as claimed in claim 8, wherein the pre-set level is determined by the processor ~~processing means~~ and is a proportion of the activity level from the radioactive source with the highest activity level.